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BC681.A1C5

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From: Gambel, Phillip
Sent: Wednesday, December 04, 2002 5:41 PM
To: STIC-ILL
Subject: isner two

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plese provide the following reference to

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----------thanx----------

9/7/28 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13443128 22142266 PMID: 12147548
Defining gene transfer before expecting gene therapy: putting the horse before the cart.
Pislaru Sorin; Janssens Stefan P; Gersh Bernard J; Simari Robert D
Division of Cardiovascular Disease and Internal Medicine, Mayo Clinic and Foundation, Rochester, Minn 55905, USA.
Circulation (United States) Jul 30 2002, 106 (5) p631-6,
ISSN 1524-4539 Journal Code: 0147763
Contract/Grant No.: HL-65191; HL; NHLBI
Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
(30 Refs.)
Record Date Created: 20020730

Q1.534
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STIC-ILL

From: Gambel, Phillip
Sent: Wednesday, December 04, 2002 5:35 PM
To: STIC-ILL
Subject: isner

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5/7/15 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13111503 21979722 PMID: 11983091
Endothelial progenitor cells for vascular regeneration.
Asahara Takayuki; Isner Jeffrey M
Cardiovascular Research and Medicine, St. Elizabeth's Medical Center, Tufts University School of Medicine, Boston, MA 02135.
Journal of hematotherapy & stem cell research (United States) Apr 2002, 11 (2) p171-8, ISSN 1525-8165 Journal Code: 100892915
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: In Process
The basis for native as well as therapeutic neovascularization is not restricted to angiogenesis but includes postnatal vasculogenesis. Our laboratory and others' have established that bone marrow-derived endothelial progenitor cells (EPCs) are present in the systemic circulation, are augmented in response to certain cytokines and/or tissue ischemia, and home to as well as incorporate into sites of neovascularization. Given the background, EPCs have been investigated as therapeutic agents in these studies of supply-side angiogenesis under pathological as well as physiological conditions. This review discusses the therapeutic potential of EPCs for cardiovascular ischemic diseases.
Record Date Created: 20020501

5/7/14 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10830378 BIOSIS NO.: 199799451523
Isolation of putative progenitor endothelial cells for angiogenesis.
AUTHOR: Asahara Takayuki; Murohara Toyoaki; Sullivan Alison; Silver Marcy; Van Der Zee Rien; Li Tong; Witzenbichler Bernhard; Schatteman Gina; Isner Jeffrey M(a
AUTHOR ADDRESS: (a)Dep. Biomed. Res., St. Elizabeth's Med. Center, Tufts Univ. Sch. Med., 736 Cambridge St., Boston**USA
JOURNAL: Science (Washington D C) 275 (5302):p964-967 1997
ISSN: 0036-8075
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Putative endothelial cell (EC) progenitors or angioblasts were isolated from human peripheral blood by magnetic bead selection on the basis of cell surface antigen expression. In vitro, these cells

12917157 BIOSIS NO.: 200100124306
Therapeutic potential of ex vivo expanded endothelial progenitor cells for myocardial ischemia.
AUTHOR: Kawamoto Atsuhiko; Gwon Heon-Cheol; Iwaguro Hideki; Yamaguchi Jun-Ichi; Uchida Shigeki; Masuda Haruchika; Silver Marcy; Ma Hong; Kearney Marianne; Isner Jeffrey M(a); Asahara Takayuki(a
AUTHOR ADDRESS: (a)St Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA, 02135: VeJeff@aol.com**USA
JOURNAL: Circulation 103 (5):p634-637 February 6, 2001
MEDIUM: print
ISSN: 0009-7322
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Background: We investigated the therapeutic potential of ex vivo expanded endothelial progenitor cells (EPCs) for myocardial neovascularization. Methods and Results: Peripheral blood mononuclear cells obtained from healthy human adults were cultured in EPC medium and harvested 7 days later. Myocardial ischemia was induced by ligating the left anterior descending coronary artery in male Hsd:RH-rnu (athymic nude) rats. A total of 106 EPCs labeled with 1,1'-dioctadecyl-1 to 3,3,3',3'-tetramethylindocarbocyanine perchlorate were injected intravenously 3 hours after the induction of myocardial ischemia. Seven days later, fluorescence-conjugated Bandeiraea simplicifolia lectin I was administered intravenously, and the rats were immediately killed. Fluorescence microscopy revealed that transplanted EPCs accumulated in the ischemic area and incorporated into foci of myocardial neovascularization. To determine the impact on left ventricular function, 5 rats (EPC group) were injected intravenously with 106 EPCs 3 hours after ischemia; 5 other rats (control group) received culture media. Echocardiography, performed just before and 28 days after ischemia, disclosed ventricular dimensions that were significantly smaller and fractional shortening that was significantly greater in the EPC group than in the control group by day 28. Regional wall motion was better preserved in the EPC group. After euthanization on day 28, necropsy examination disclosed that capillary density was significantly greater in the EPC group than in the control group. Moreover, the extent of left ventricular scarring was significantly less in rats receiving EPCs than in controls. Immunohistochemistry revealed capillaries that were positive for human-specific endothelial cells. Conclusions: Ex vivo expanded EPCs incorporate into foci of myocardial neovascularization and have a favorable impact on the preservation of left ventricular function.

5/7/7 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12955710 BIOSIS NO.: 200100162859
Therapeutic angiogenesis for ischemic cardiovascular disease.
AUTHOR: Freedman Saul Benedict; Isner Jeffrey M(a
AUTHOR ADDRESS: (a)St. Elizabeth's Medical Center, 736 Cambridge St., Boston, MA, 02135: VeJeff@aol.com**USA
JOURNAL: Journal of Molecular and Cellular Cardiology 33 (3):p379-393 March, 2001
MEDIUM: print
ISSN: 0022-2828
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: In animal models of ischemia, a large body of evidence indicates that administration of angiogenic growth factors, either as recombinant protein or by gene transfer, can augment nutrient perfusion through neovascularization. While many cytokines have angiogenic activity, the best studied both in animal models and clinical trials are vascular endothelial growth factor (VEGF) and fibroblast growth factor (FGF).

differentiated into ECs. In animal models of ischemia, heterologous, homologous, and autologous EC progenitors incorporated into sites of active angiogenesis. These findings suggest that EC progenitors may be useful for augmenting collateral vessel growth to ischemic tissues (therapeutic angiogenesis) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian angiogenesis.

RC 681.A1 A57137
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NPL

5/7/11 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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1644 1215

12447047 BIOSIS NO.: 200000200549
Transplantation of ex vivo expanded endothelial progenitor cells for therapeutic neovascularization.
AUTHOR: Kalka Christoph; Masuda Haruchika; Takahashi Tomono; Kalka-Moll Wiltrud M; Silver Marcy; Kearney Marianne; Li Tong; Isner Jeffrey M (a); Asahara Takayuki(a
AUTHOR ADDRESS: (a)St. Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA, 02135**USA
JOURNAL: Proceedings of the National Academy of Sciences of the United States of America 97 (7):p3422-3427 March 28, 2000
ISSN: 0027-8424
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Animal studies and preliminary results in humans suggest that lower extremity and myocardial ischemia can be attenuated by treatment with angiogenic cytokines. The resident population of endothelial cells that is competent to respond to an available level of angiogenic growth factors, however, may potentially limit the extent to which cytokine supplementation enhances tissue neovascularization. Accordingly, we transplanted human endothelial progenitor cells (hEPCs) to athymic nude mice with hindlimb ischemia. Blood flow recovery and capillary density in the ischemic hindlimb were markedly improved, and the rate of limb loss was significantly reduced. Ex vivo expanded hEPCs may thus have utility as a "supply-side" strategy for therapeutic neovascularization.

12559539 BIOSIS NO.: 200000313041
Vascular endothelial growth factor165 gene transfer augments circulating endothelial progenitor cells in human subjects.
AUTHOR: Kalka Christoph; Masuda Haruchik; Takahashi Tomono; Gordon Rebecc; Tepper Oren; Gravereaux Edwin; Pieczek Ann; Iwaguro Hideki; Hayashi Shin-Ichiro; Isner Jeffrey M; Asahara Takayuki
AUTHOR ADDRESS: (a)St. Elizabeth's Medical Center, 736 Cambridge St, Boston, MA, 02135**USA
JOURNAL: Circulation Research 86 (12):p1198-1202 June 23, 2000
MEDIUM: print
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Preclinical studies in animal models and early results of clinical trials in patients suggest that intramuscular injection of naked plasmid DNA encoding vascular endothelial growth factor (VEGF) can promote neovascularization of ischemic tissues. Such neovascularization has been attributed exclusively to sprout formation of endothelial cells derived from preexisting vessels. We investigated the hypothesis that VEGF gene transfer may also augment the population of circulating endothelial progenitor cells (EPCs). In patients with critical limb ischemia receiving VEGF gene transfer, gene expression was documented by a transient increase in plasma levels of VEGF. A culture

differentiated into ECs. In animal models of ischemia, heterologous, homologous, and autologous EC progenitors incorporated into sites of active angiogenesis. These findings suggest that EC progenitors may be useful for augmenting collateral vessel growth to ischemic tissues (therapeutic angiogenesis) and for delivering anti- or pro-angiogenic agents, respectively, to sites of pathologic or utilitarian angiogenesis.

Q11. N26
MPL

5/7/11 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

Phillips Gambel
1644 1215

12447047 BIOSIS NO.: 200000200549
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AUTHOR: Kalka Christoph; Masuda Haruchika; Takahashi Tomono; Kalka-Moll Wiltrud M; Silver Marcy; Kearney Marianne; Li Tong; Isner Jeffrey M (a); Asahara Takayuki(a
AUTHOR ADDRESS: (a)St. Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA, 02135**USA
JOURNAL: Proceedings of the National Academy of Sciences of the United States of America 97 (7):p3422-3427 March 28, 2000
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JOURNAL: Circulation Research 86 (12):p1198-1202 June 23, 2000
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AUTHOR: Kawamoto Atsuhiko; Gwon Heon-Cheol; Iwaguro Hideki; Yamaguchi Jun-Ichi; Uchida Shigeki; Masuda Haruchika; Silver Marcy; Ma Hong; Kearney Marianne; Isner Jeffrey M(a); Asahara Takayuki(a
AUTHOR ADDRESS: (a)St Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA, 02135: VeJeff@aol.com**USA
JOURNAL: Circulation 103 (5):p634-637 February 6, 2001
MEDIUM: print
ISSN: 0009-7322
DOCUMENT TYPE: Article
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5/7/7 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12955710 BIOSIS NO.: 200100162859
Therapeutic angiogenesis for ischemic cardiovascular disease.
AUTHOR: Freedman Saul Benedict; Isner Jeffrey M(a
AUTHOR ADDRESS: (a)St. Elizabeth's Medical Center, 736 Cambridge St., Boston, MA, 02135: VeJeff@aol.com**USA
JOURNAL: Journal of Molecular and Cellular Cardiology 33 (3):p379-393 March, 2001
MEDIUM: print
ISSN: 0022-2828
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: In animal models of ischemia, a large body of evidence indicates that administration of angiogenic growth factors, either as recombinant protein or by gene transfer, can augment nutrient perfusion through neovascularization. While many cytokines have angiogenic activity, the best studied both in animal models and clinical trials are vascular endothelial growth factor (VEGF) and fibroblast growth factor (FGF).

RC 681. A1 C5
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Phillip Gambel
1644 12/5

Clinical trials of therapeutic angiogenesis in patients with end-stage coronary artery disease have shown large increases in exercise time and marked reductions in symptoms of angina, as well as objective evidence of improved perfusion and left ventricular function. Larger scale placebo-controlled trials have been limited to intracoronary and intravenous administration of recombinant protein, and have not yet shown significant improvement in either exercise time or angina when compared to placebo. Larger scale placebo-controlled studies of gene transfer are in progress. Future clinical studies will be required to determine the optimal dose, formulation, route of administration and combinations of growth factors, as well as the requirement for endothelial progenitor cell or stem cell supplementation, to provide effective and safe therapeutic myocardial angiogenesis.

RC 681. A1 R5 MPL

Phillip's Gambel 1644 1215

13558329 BIOSIS NO.: 200200187150
Endothelial progenitor cell vascular endothelial growth factor gene transfer for vascular regeneration.
AUTHOR: Iwaguro Hideki; Yamaguchi Jun-ichi; Kalka Christoph; Murasawa Satoshi; Masuda Haruchika; Hayashi Shin-ichiro; Silver Marcy; Li Tong; Isner Jeffrey M; Asahara Takayuki(a
AUTHOR ADDRESS: (a)St Elizabeth's Medical Center, 736 Cambridge St, Boston, MA, 02135**USA E-Mail: asa777@aol.com
JOURNAL: Circulation 105 (6):p732-738 February 12, 2002
MEDIUM: print
ISSN: 0009-7322
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background-Previous studies have established that bone marrow-derived endothelial progenitor cells (EPCs) are present in the systemic circulation. In the current study, we investigated the hypothesis that gene transfer can be used to achieve phenotypic modulation of EPCs. Methods and Results-In vitro, ex vivo murine vascular endothelial growth factor (VEGF) 164 gene transfer augmented EPC proliferative activity and enhanced adhesion and incorporation of EPCs into quiescent as well as activated endothelial cell monolayers. To determine if such phenotypic modulation may facilitate therapeutic neovascularization, heterologous EPCs transduced with adenovirus encoding VEGF were administered to athymic nude mice with hindlimb ischemia; neovascularization and blood flow recovery were both improved, and limb necrosis/autoamputation were reduced by 63.7% in comparison with control animals. The dose of EPCs used for the in vivo experiments was 30 times less than that required in previous trials of EPC transplantation to improve ischemic limb salvage. Necropsy analysis of animals that received DiI-labeled VEGF-transduced EPCs confirmed that enhanced EPC incorporation demonstrated in vitro contributed to in vivo neovascularization as well. Conclusions-In vitro, VEGF EPC gene transfer enhances EPC proliferation, adhesion, and incorporation into endothelial cell monolayers. In vivo, gene-modified EPCs facilitate the strategy of cell transplantation to augment naturally impaired neovascularization in an animal model of experimentally induced limb ischemia.

5/7/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13889304 BIOSIS NO.: 200200518125
Therapeutic angiogenesis for coronary artery disease.
AUTHOR: Freedman Saul Benedict(a); Isner Jeffrey M(a
AUTHOR ADDRESS: (a)Inq.: Mickey Neely, St. Elizabeth's Medical Center, 736 Cambridge Street, Boston, MA, 02135**USA E-Mail: mneely222@aol.com
JOURNAL: Annals of Internal Medicine 136 (1):p54-71 1 January, 2002
MEDIUM: print